Research Paper

Developing a Based-on-play Cognitive-behavioral Educational Package and Determining Its Effectiveness in Improving the Language Disorders and Social Adjustment in Bilingual Children

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ABSTRACT

Background: The present study was conducted to develop a game-based cognitive-behavioral educational package and determine its effectiveness in improving the receptive language disorders and social adjustment of bilingual children.

Methods: The current study was applied objectively and in terms of the nature of the data, it was quasi-experimental with a pretest post-test design and follow-up with experimental, control, and pseudo-control groups. The statistical population of the research includes all bilingual children of Bojnord City, Iran who were studying in preschool centers in the academic year 2018-2019. A sample consisting of 60 male and female students was selected using convenience sampling and according to the inclusion and exclusion criteria, and they were randomly assigned to three experimental, control, and pseudo-control groups (each group with 20 people). In the pretest stages, the participants completed the Nikamer and Hamill language development test and the Dokhanchi social adjustment scale, and then during the intervention process of the experimental group, they received a game-based cognitive-behavioral training program for 12 sessions. The pseudo-control group received a program except for play therapy, and the control group received no intervention. After the end of the intervention, all three groups responded to both scales again in the post-test stages and were re-evaluated after two months. The data were analyzed using the analysis of variance test with repeated measurements and using SPSS software, versian 24.

Results: The results showed that the game-based cognitive-behavioral intervention is significantly effective in improving the receptive language disorders and social adjustment of bilingual children compared to the control and quasi-control groups.

Conclusion: It seems that game-based cognitive-behavioral interventions can play a significant role in improving the language skills and social adaptation of bilingual children.

Keywords: Based-on-play cognitive-behavioral interventions, Receptive language disorders, Social adjustment, Bilingual

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1. Introduction

Bilingualism is a phenomenon that exists in most countries of the world. Today, more than half of the world's population is bilingual [1]. A bilingual is a person, who can speak two or more languages that are different in terms of phonetics, vocabulary, and grammar, and bilingual students also speak their mother tongue at home and in their living environment, but they learn their literacy in the second language and solve part of their social needs in the second language [2].

Different studies showed that bilingual people have problems performing vocabulary-related tasks due to existing inter-language interferences [3]. Since their mother tongue is different from the official language taught in preschool and school, bilingual people face more problems than monolingual people in various educational aspects, such as reading, writing, speaking, and even arithmetic [4]. Therefore, one of the crucial elements of transformational learning that should develop in a child before elementary school and be the basis for his social, economic, and educational life is language [5]; and language disorders are one of the most controversial groups of disorders in the diagnostic class of communication disorders [6]; its main diagnostic features are the incorrect use of words and their meanings, the inability to express opinions, the use of inappropriate grammatical patterns, reduced vocabulary and the inability to follow instructions and understand words [7].

Language disorders include disorders in receptive language and expressive language; That is, when a person has a problem understanding others, he has a disorder in receptive language, and if he has a problem in expressing his thoughts and opinions, desires, and feelings, he has a disorder in expressive language [8]. Children with a receptive language disorder may have difficulty understanding words or classes of words or specific concepts and grammatical structures [9]. Approximately 5% of school-aged children have receptive language disorders [10]. The research was conducted on 852 Egyptian children aged 3 to 5 years. The results showed that 8.30 of these children have receptive and expressive language disorders [11].

Another problem faced by bilingual children is social adaptation [12]. Social adaptation is defined as the necessary skills to adapt to social needs and maintain satisfactory interpersonal relationships [13]. Learning social adaptation is part of the problem of socialization in children. Socialization is a process in which a person's norms, skills, motivations, attitudes, and behavior are formed [14]. In this regard, research results showed that bilingual children are weak in the development of extra-social skills [12]. Also, research results show that bilingual children face more problems in social adaptation compared to monolingual children because their mother tongue is different from the official language [4].

Considering that different factors are effective in the cognitive and social problems of bilingual children, requires different educational and therapeutic methods and programs. Play therapy is one of the methods that has great value among the types of rehabilitation methods in terms of training, therapy, and education in reducing cognitive, social, and behavioral problems [15]. Play therapy is described as a dynamic interpersonal relationship between a child and a trained therapist. In this therapeutic process, an opportunity is created for safe communication between the child and the therapist so that the child can fully express himself [16]. One of the effective approaches is the Based-on-play cognitive-behavioral approach [17], which causes the development of cognitive/metacognitive skills as well as behavioral skills [18].

In the play-based cognitive-behavioral approach, methods, such as self-monitoring and dependency management techniques, such as positive reinforcement, shaping, extinction, and role modeling are used, and improving cognitive and social problems is one of its ultimate goals [19-24]; and the intervention of cognitive-behavioral play therapy in children is effective in improving their language disorders by creating a context for active participation in treatment, accepting responsibility for changing their behavior, and receiving reinforcement and role models [17]. Also, short-term cognitive-behavioral therapy group reduces learning and psychological problems and improves students' academic performance [25]. In this regard, Epel et al's research results showed that the cognitive-behavioral therapy group is effective in improving children's self-esteem [26]. The results of Thorisdottir et al's research showed that the cognitive-behavioral therapy group is effective in reducing social anxiety disorder in high school students [27]. Also, Karaca et al concluded in their research that cognitive-behavioral therapy group is effective in improving general health and reducing children's negative thoughts [28].

Research results showed that play therapy is effective in improving cognitive and learning problems of children with learning disorders [26], and music and puppet shows in preschool children improve language learning

and various communication roles in children [29]. A review of the research history shows that less research has been done on the effectiveness of Based-on-play cognitive-behavioral interventions in improving receptive language disorders and social adjustment of bilingual children and a major research gap exists in this field [29, 30].

This research has determined the effectiveness of Based-on-play cognitive-behavioral interventions on learning problems and academic performance, therefore, the results of this research can pave the way for future studies in this field. Therefore, in the present study, a new and creative Based-on-play cognitive-behavioral educational package was used, whose goals, content, and tasks are completed following the cognitive-behavioral approach designed by the researcher of the article.

Considering that the period before primary school is a critical and sensitive age for language learning and paying attention to the importance of received language in understanding words and sentences, others' opinions and following oral instructions, and the importance of social adjustment in listening, sympathy, and empathy, nonverbal communication, cooperation, responsibility, self-control, awareness of one's strengths and weaknesses, flexibility in behavior for children, especially bilingual children; therefore, it is useful to use educational methods suitable for their moods as well as to find a way to communicate effectively with them. Therefore, the present study was conducted to determine the effectiveness of Based-on-play cognitive-behavioral intervention in improving receptive language disorders and social adjustment of bilingual children.

2. Methods

The current research method was quasi-experimental research with a pretest posttest design and follow-up with three experimental, control, and pseudo-control groups. The statistical population of the present study included all bilingual children of Bojnord City who were studying in preschool centers in 2018-2019. For this purpose, samples of 60 people were selected using the convenience sampling method and according to the inclusion and exclusion criteria, and randomly divided into three experimental, control, and pseudo-control groups (20 people in each group). Also, to estimate the sample size, the method proposed by Cohen was used [31]. Based on this, in the present study, which was with three groups of experimental, control, and pseudo-control, we obtained α=0.05 and predicted an average effect size (0.25) by choosing 20 subjects for each group. The inclusion criteria included having normal intelligence based on the score obtained in the Wechsler intelligence scale for children, 4th edition, being in the age range of 6 to 7 years, not using psychological and speech therapy services at the same time, and obtaining a high score in the expressive language subscales and receiving the language development test and consent to participate in the research, and the exclusion criteria included having any obvious psychological disorder (emotional or mood disorders, hyperactivity, autism, etc.) the presence of severe vision and hearing defects in the child, as well as being absent from a meeting from intervention sessions. Also, in the current research, the following scales were used to collect information.

Language development test

Test of language development–primary, third edition (TOLD-P:3): This test was designed by Newcomer and Hamill [32]. This test is based on a two-dimensional model, in one dimension of which there are cognitive linguistic systems with listening, organization, and speaking components, and in the other dimension, cognitive linguistic coordinates with semantics, syntax, and phonology components. This test includes 9 sub-tests designed for children aged 4 to 8 years and 11 months. In the present study, subtests of received language, visual vocabulary (30 items), and grammar comprehension (25 items) were used. This test has been standardized for 1235 children (609 girls, 626 boys) in the age range of 4 years to 8 years and 11 months in Tehran City [33]. The reliability of this test was obtained using Cronbach's alpha method, with an average of 0.89, and a correlation coefficient of 0.82 using the retest method. Its validity has also been investigated using the methods of content validity, criterion validity, and construct validity. Its content validity was confirmed by the opinion of experts. Also, the validity of this correlation criterion was examined with related tests, and the range of coefficients was between 0.42 and 0.71. Also, the construct validity of this test was investigated using exploratory factor analysis, and the coefficients on the primary factors had favorable factor loadings [34].

Wechsler intelligence scale for children-fourth edition (WISC-IV): In the present study, the fourth edition of the Wechsler intelligence scale for children was used. This scale was prepared in 2003 to measure the intelligence of children aged 6 to 16 years. It has 16 subscales, of which 10 subscales (design of cubes, similarities, digit spacing, image concepts, coding, vocabulary, sequence of letters and numbers, visual reasoning, reading comprehension, and symbolization) are the main subscales and five subscales (completing pictures, sketching, gen-

Table 1. Summary of the content of the meetings

Sessions	Section Titles	Contents
1	Story painting your image	Explaining the rules and activities of meetings, communicating effectively, getting to know each other and with the playroom, introducing scoring tables and rewards and assignments
2	Spoon dolls play command	Increasing interpersonal and group communication skills, strengthening attention and listening using active child participation, using Socratic questioning, the importance of emotions, and behavioral techniques, determining self-help practices, and the important role and position of individuals in communication
3	"What do you remember" play Heterogeneous association table	Increasing interpersonal and group communication skills, empowering visual vocabulary skills using the cognitive behavioral approach, using cognitive and behavioral techniques, project, role playing, strengthening verbal and nonverbal skills
4	Sandbox Play "the speaker's hat" Creating a story	Identifying and controlling oneself, distinguishing between words through a cognitive-behavioral approach, increasing assertiveness skills, increasing verbal and communication skills, learning self-loathing techniques, supervising self-monitoring, and using a four-step coping plan in the real environment
5	Doing art(collage) Retelling the story Puppets	Emotional processing and self-awareness, increasing understanding of syntactic aspects of language relationships using the cognitive behavioral approach, self-actual exercise, gradual exposure activities using selective methods, facilitating the continuous process of self-monitoring in the real environment, exploring and strengthening abilities and strengths, cognitive restructuring, processing and strengthening self-cognition
6, 7	Emotion cycle play Play pantomime Emotions Storytelling Glossary of emotions Feel play on the face	Identifying and managing emotions, empowering children to imitate words and processing auditory information using the cognitive behavioral approach, strengthening the proper expression of emotion and the necessity of expressing emotional experiences, providing an effective coping pattern, practicing new coping skills, recognizing and expressing emotions in a safe environment, strengthening understanding of concepts and processing them
8	Calming music Storytelling Role modeling and role playing Puppet show	To identify physical reactions and cope with negative emotions, empower children to express and understand the words heard using the cognitive-behavioral approach, modeling coping with wrong and dysfunctional reactions and beliefs about language disorders, identifying physical reactions, using relaxation techniques, self-regulation and coping self-talk
9, 10	Puppet show Role playing Story making with image cards	Understanding the role of thoughts, replacing negative and dysfunctional self-talk with positive self-talk, empowering children to increase verbal vocabulary skills using the cognitive-behavioral approach, identifying causes and dysfunctional beliefs when speaking and expressing themselves, teaching verbal vocabulary skills, distinguishing efficient and useful thoughts from dysfunctional thoughts
11	Story plot Play train wagons	Problem-solving skills, increasing skills in completing sentences using the cognitive behavioral approach, strengthening active coping with negative thoughts and emotions, presenting a coping pattern, active coping methods with emotions and self-talk (Socratic method), problem-solving (brain precipitation method)
12	Puppet show Emotion cards	Empowering spontaneous speaking using the cognitive behavioral approach, introducing concepts of reward and punishment, self-assessment and rewarding, normalizing challenges and spontaneous speaking, awarding our completion certificate

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eral information, arithmetic, and verbal reasoning) are considered complementary subscales. This test provides four index scores, including (comprehension of verbal content, perceptual reasoning, working memory, processing speed, and general intelligence) and was standardized by Sadeghi, Rabiei and Abedi [35]. The correlation of this scale with the revised scale of the third edition and Raven's progressive matrices in related sections is high and significant. Also, the reliability of the subscales using the retest method has been reported in the range of 0.65 to 0.95 and using the halving method from 0.71 to 0.86.

Social adjustment scale

This questionnaire was created by Dokhanchi in 2017, and has 37 four-choice questions (with the options of never, rarely, sometimes, and most of the time) that mothers select one of these options that are more compatible with their child's behavioral status. They choose

the scores of this questionnaire in a range of zero to three. This questionnaire measures high and low compatibility, so that questions 1, 3, 7, 15, 16, 20, 21, 22, 32, 35, 36, and 37 measure compatibility and the options never=0, rarely=1, sometimes=2, and most of the time, 3 is given, and conversely, in other questions that measure inconsistency, the higher scores in each are the measuring criteria, and the options never=3, rarely=2, sometimes=1 and most of the time=0 marks are awarded; as a result, the child's minimum and maximum score in this questionnaire are from 0 to 111. To check the validity of this questionnaire, Dokhanchi reported a criterion validity coefficient of 0.81. Also, the reliability coefficient of the current questionnaire was reported as 0.79 using the dichotomization method and 0.72 using Cronbach's alpha method [36]. In the present study, reliability was obtained by the internal consistency method by calculating Cronbach's alpha of 0.71.

Based-on-play cognitive-behavioral educational program

This program in the present study is based on available scientific and research resources related to play therapy and play therapy programs and protocols [37] and cognitive-behavioral play therapy protocol [38] in this area, focusing on the cognitive and behavioral domain, was prepared by the main author of this article and adapted based on the age and characteristics of children with receptive language disorders. Also, the assignments and content of the sessions have been modified based on the opinion of experts in this field. In addition, to calculate the ratio of content validity index and content validity index, the opinions of experts in the field of program content were used, and explaining the goals of the program to them and providing them with operational definitions related to the content of the program, they are asked to answer some questions.

Answer the validity of the program

Based on the obtained results, the minimum and maximum relative content validity index (CVI) for each material or program component are (0.70 and 1), respectively, and the minimum and maximum content validity ratio (CVR) for each material or program component was obtained (0.75 and 1). In this way, the cognitive-behavioral training program had acceptable validity for educational and clinical use. This educational program was implemented as a group for 12 sessions (90 minutes). Also, a summary of the purpose and content of the meetings is provided below (Table 1).

Research implementation method

To implement the educational program after identifying bilingual children with language disorders using the TOLD and Wechsler test, 60 students who met the inclusion and exclusion criteria were randomly selected into three experimental, control, and pseudo-control groups. They were put under pseudo-control. The implementation process was as follows, first, the language development test was implemented; then the experimental group received the play-based cognitive-behavioral intervention program in twelve 90-minute sessions, the pseudo-control group was given a program different from the play and was implemented in the form of practical work and handwork (embroidery), and the control group (which acts as a standard) and to compare the experimental group with the control group to investigate the effect of an independent variable (different from the pseudo-control group, it received no intervention). Then, after receiving the educational program of cognitive-behavioral play therapy, the language development test was taken again from all three groups. Also, in each session, 10 minutes were spent reviewing the exercises of the previous session before starting the training. Sixty minutes of the session were dedicated to new exercises. At the end of each session, children and their parents were given feedback and how their child progressed in that session. Also, through preliminary training to research assistants, the use of implementation instructions, and random monitoring of some training program implementation sessions while doing the work, it was tried that confounding factors, such as the pretest effect and measurement tools to a large extent control and the same principles for implementation. Interventions and pretest and posttest were used. After two months, the follow-up test was performed. Some of the ethical considerations of the research are that the participants were selected fairly, in such a way that the probability of each member of the society being included in the sample is equal.

Obtaining informed consent from the subjects who participated in the research and that they can withdraw from its continuation at any stage of the research. All the participants who took part in the research had the right to choose a pseudonym so that they would not be identified and the subjects were promised that the information obtained from them would remain confidential and would not be published. Also, to analyze the data after observing the statistical assumptions, the analysis of variance test with repeated measurements was used. Also, the data was analyzed by SPSS software, version 24.

3. Results

The average subjects' scores in the experimental group in the post-test and follow-up phase of the received language disorder variable compared to the control and pseudo-control groups decreased, and in the variable of social adjustment, the subjects' scores in the experimental group have increased in the post-test and follow-up phase compared to the control and quasi-control groups (Table 2). The test of variance analysis of repeated measures (repeated) has some assumptions. Kolmogorov-Smirnov tests were used to check the normality of the data. The results of this test showed that the significance level of both dependent variables of the research in all three groups is greater than the significance level (0.05) needed to reject the null hypothesis (P<0.05), so our null hypothesis is based on normality. The distribution of grades is confirmed. Levene's test was also used to check the homogeneity of variances of the three groups. The results of this test showed a significant level of the values of this test in the post-test and follow-up phase in the variables of receptive language disorder (F=2.59, F=2.57, P>0.05) and social adjustment (P>0.05). Was not significant, therefore the assumption of homogeneity of variances was confirmed (F=0.40, F=0.13). Also, one of the main assumptions of this test is the assumption of sphericity. The results of which are presented in Table 3.

The assumption of sphericity is a necessary condition for the validity of the f-test. According to Table 4, the significance level of both variables of the Mokhli test is less than the significance level value (P<0.05). As a result, the null hypothesis based on the equality of variances related to the dependent variables is rejected and the assumption of sphericity, which is one of the assumptions of variance analysis with repeated measurements, is rejected, therefore, the epsilon part of Geyser Greenhouse should be used, which is higher than 0.90 and is very close to one, therefore the assumption of porous sphericity is confirmed. After making sure that the assumptions were established, repeated measurement analysis of variance test was used to analyze the data, the results of which are presented below.

The results of repeated measures analysis of variance showed a significant difference between the three experimental, pseudo-control, and control groups in the research variables (P<0.05). The within-subject effect and the interaction effect on the mean of receptive language disorder and social adjustment variables were also significant (P<0.05).

The results of the main effects between the subjects in the cognitive variables indicate the significance of the time effect ($F_{(2,57)}$=3157.604; P>0.05) and the time-group interaction ($F_{(2,57)}$=30.30; P>0.05) has been

Table 2. Mean±SD of the pre-test, post-test, and follow-up scores in the research variables by three groups

Variables	Groups	Mean±SD		
		Pre-test	Post-test	Follow-up
Language disorder received	Experiment	10.90±1.483	10.45±1.583	9.75±3.369
	Pseudo-control	9.90±0.85	10.20±0.89	10.35±0.745
	Control	10.20±0.894	10.65±0.988	10.75±0.851
Social skills	Experiment	48±7.82	86.7±7.49	93.6±7.401
	Pseudo-control	45.1±10.02	48.3±9.66	48.4±9.816
	Control	46.50±8.33	47±8.49	47.05±8.407

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Table 3. Delay test related to checking the default assumption of covariance matrix uniformity

Variables	Mokhli	Chi-square	df	Sig.	Greenhouse-Geyser
Language disorder received	0.62	26.69	2	0.001	0.91
Social skills	0.96	2.29	2	0.001	0.96

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Table 4. Results of the ANOVA of the repeated measurement of the difference between the three experimental, control, and quasi-control groups in the research variables

Variables	Statistical Index	Values	F	Hypothesis df	Error df	Sig.
Language disorder received	Pillai's Trace	0.010	0.276	2	56	0.009
	Wilks' Lambda	0.990	0.276	2	56	0.009
	Hotelling's Trace	0.010	0.276	2	56	0.009
	Roy's Largest Root	0.010	0.276	2	56	0.009
Language disorder received× group	Pillai's Trace	0.114	1.725	4	114	0.049
	Wilks' Lambda	0.886	1.748	4	112	0.045
	Hotelling's Trace	0.129	1.768	4	110	0.040
	Roy's Largest Root	0.128	3.638	4	57	0.033
Social adjustment	Pillai's Trace	0.884	213.596	2	56	0.001
	Wilks' Lambda	0.116	213.596	2	56	0.001
	Hotelling's Trace	7.628	213.596	2	56	0.001
	Roy's Largest Root	7.628	213.596	2	56	0.001
Social adjustment× group	Pillai's Trace	0.923	24.416	4	114	0.001
	Wilks' Lambda	0.078	72.2	4	112	0.001
	Hotelling's Trace	11.795	162.177	4	110	0.001
	Roy's Largest Root	11.794	336.120	2	57	0.001

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estimated to be significant on the average perceived language disorders and social adaptation of children ($P<0.05$). As a result, the difference stated in the hypothesis is significant and the play-based cognitive-behavioral intervention has a significant effect on children's receptive language disorders and social adjustment.

Table 5 shows the results of the simple between-group effects test. Following the significance of the difference in the scores in the three measurement stages of pretest, post-test, and follow-up between the three experimental, pseudo-control, and control groups through the difference of means (I-J) and according to the significance column of both variables and comparing it with $\alpha=0.05$ showed that the experimental group has a significant difference with the control group and it is expected that considering the time factor, children's receptive language disorders in the experimental group are less than the control group and social adaptation in the experimental group is more than the control group. In this way, the most significant difference between the experimental group and the control group was observed regarding the time variable.

4. Discussion

The present study was conducted to determine the effectiveness of Based-on-play cognitive-behavioral intervention in improving receptive language disorders and social adjustment of bilingual children. The results of the present study showed that play-based cognitive-behavioral interventions are significantly effective on receptive language disorders and social adjustment of bilingual children. This finding is consistent with the findings of other studies [19, 20, 23, 30, 39-41]. Also, the findings showed that the use and application of therapeutic plays lead to the development of basic reading and writing skills, including phonological awareness [42], which is consistent with the findings of the present study. Schreibman showed that performing 12 sessions of play therapy

Table 5. Results related to the main effects between the subjects in the research variables

Variables	Models	Sum of Squares	df	Mean Squares	F	Sig.	Effect Size Square Eta	Statistical Power
Language disorder received	Time	19282.050	1	19282.050	7972.991	0.001	0.993	1.000
	Time×group	8.433	2	4.217	2.917	0.046	0.231	0.901
	Error	137.850	57	2.418	-	-	-	-
Social Skills	Time	579474.272	1	579474.272	3079/1	0.001	0.982	1.000
	Time×group	33741.944	2	16870.92	89.649	0.001	0.759	1.000
	Error	10726.783	57	188.189	-	-	-	-

(through role playing) improved children's language skill delays and prerequisites for reading and writing, including (syllabic awareness), and over time, the stability of the treatment was completely evident; also, language plays lead to the development of literacy concepts, such as sound, syllables, etc. [43].

The play-based cognitive-behavioral interventions in the behavioral dimension by creating a context for the child's active participation in treatment, providing the opportunity to control their own speaking, accepting responsibility for changing your behavior, receiving reinforcement and example, solving their problems, finding an opportunity to express your annoying feelings and show them [17, 44], improving leadership skills and social and communication adaptation [45] are effective in improving children's receptive language disorders, and by focusing on the cognitive dimension, in cognitive play therapy during the treatment process, the behavior of the therapist helps the bilingual children with receptive language disorder to identify and correct their cognitions or to build them, in addition to helping the child to identify their cognitive distortions, he teaches them to replace the incompatible thinking towards the school environment and educational space with compatible thinking, and for this purpose, he uses cognitive techniques, such as recording thoughts, cognitive change strategies, confrontational inner speech.

The results of another study showed children who had problems in defining oral words, recalling words, and grammatically completing sentences, and even when they wanted to introduce themselves to others or could express their emotions easily, they were not their thoughts in the initial sessions of cognitive-behavioral play therapy. In the final sessions, they introduced themselves or their friend easily and without any interference, explained the story or the events that happened, and were able to express the situation and anxiety-causing challenges [24]. Also, the findings show a child who has social problems and is incapable of social functioning and does not want to communicate with others and also feels afraid of any situation that may be exposed to his peers and teachers in the school environment. He has low social competence.

The cognitive-behavioral approach during therapy sessions challenges different ways of irrational thoughts and beliefs that are effective in the occurrence of behavior, therefore children who have low social adjustment are aware of these thoughts. It is illogical and by replacing them with logical thoughts, they can find more social skills and express their opinions, feelings, and wishes more easily. On the other hand, by identifying the ineffective behaviors of their children and replacing them with appropriate and efficient behaviors, parents develop skills, such as cooperation, responsibility, empathy, self-control, respect for themselves and others, and interaction with others among their children. This improves social adjustment in bilingual children. On the other hand, since one of the main causes of receptive language disorders is the presence of inappropriate cognition and thoughts to understand the behavior and opinions of others, the cognitive-behavioral approach seeks to correct these thoughts by targeting them, and as these thoughts emerge in children's behaviors, non-verbal behaviors, following sequential instructions and taking turns when speaking with others improve among bilingual children.

Study limitations

Since the current research is quasi-experimental and it was not possible to control all intervening variables (parents' literacy and their social and economic status

and students' personality traits) and it is possible that the subject was influenced by conditions beyond the researcher's control and this can jeopardize the internal validity of the research

Considering that this research was conducted only in the community of bilingual pre-school children in Bojnord City, and in generalizing it to children of other developmental periods and other regions, necessary precautions have been taken.

5. Conclusion

Play-based cognitive-behavioral interventions enable the child to develop skills, such as cooperation, empathy, emotion regulation, strong self-concept, and necessary self-confidence, which can play a facilitating role in interpersonal relationships, based on constructive interaction with parents and therapists. Therefore, the child's ability to face new situations is facilitated, and children are better able to deal with conflict and stress, and as a result, they have happier, more stable, and compatible relationships [12]. The findings of the present research not only show the importance and position of developing and implementing targeted and efficient play-based interventions in the form of cognitive-behavioral plays for bilingual children but also clearly show that these training should include all aspects of language in which the child is weak. So that after the educational period these children can reach the average level of language ability, which is necessary for their educational progress and social communication.

Study suggestion

In future studies, the effectiveness of experimental variables on receptive language disorders and social adjustment of bilingual children should be investigated by controlling disturbing variables. It is suggested to examine the effectiveness of the play therapy educational program with a cognitive-behavioral approach on other psychological variables, such as anxiety, fear, aggression, and depression of bilingual students in elementary school. The provided play therapy program can be a model for managers, educational planners, counselors, psychotherapists, speech therapists, and parents to take steps to improve children's language disorders and social adaptation by teaching play-based cognitive-behavioral interventions. Considering the positive energy generated among colleagues and students and reducing the dry and traditional atmosphere of play therapy education, it is suggested to include it as an independent lesson in the students' weekly schedule, especially in the bilingual areas of the country. In preschool centers and schools, it seems necessary for teachers and trainers to be familiar with the stages of the process and theories, and use play to reduce psychological problems, especially language disorders and social adjustment of children. Planned plays and activities based on the cognitive-behavioral approach strengthen the linguistic aspects of the bilingual child and prepare him to enter society, and by including the mentioned plays in the intervention process of bilingual children with disorders, the language solved its related problems.

Ethical Considerations

Compliance with ethical guidelines

This study with the ethical code of IR.BUMS.REC.1399.427 has been approved by the Islamic Azad University of Qaenat Branch City, Iran.

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Authors' contributions

The main idea of implementing the protocol and writing the manuscript: Sh. Rezaei Rezvan; Manuscript editing: H. Karashki; Data analysis: Najmeh Sadat Hajivosoogh and Seyed Saeed Torabi.

Conflict of interest

The authors declare no conflict of interest.

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